

CLAIMS AS AMENDED

1. (currently amended) A method for displaying communication data transmitted according to a communication protocol standard, comprising:

receiving one or more first protocol units of said communication data transmitted according to a first protocol level of said communication protocol standard for completing a second protocol unit-an operation at a second protocol level of said communication protocol standard;

converting said first protocol unit-communication data into first text fields according to said first protocol level and converting said second protocol unit into second text fields according to said second protocol level;

associating said first text fields with respective first field descriptors on a one-to-one basis according to said first protocol level for forming respective first field cells and associating said second text fields with respective second field descriptors on a one-to-one basis according to said second protocol level for forming respective second field cells; and

displaying said second protocol unit having said first and second field cells-on a display, said second field cells displayed in a hierarchical manner with respect to said one or more first protocol units having said first field cells.

2. (currently amended) The method of claim 1, wherein:

said one or more first protocol units-is a represent packets in-level protocol for said communication protocol standard.

3.. (currently amended) The method of claim ~~1~~ 2, wherein:

said ~~first~~ second protocol unit-is represents said one or more first protocol units at said second protocol level-a protocol at level that is higher than a packet level protocol for said communication protocol standard.

4. (currently amended) The method of claim 1, wherein:

displaying said first and second field cells includes: displaying said first protocol units in a horizontal manner having said first field descriptors disposed above said associated first text fields, respectively, as identifiable cells; and displaying said second protocol unit in a horizontal manner having said second field descriptors disposed above said associated second text fields, respectively, as identifiable cells.

~~organizing said second field cells into a second protocol unit;~~

~~displaying said second protocol unit in a linear manner;~~

~~organizing said first field cells into at least one first protocol unit, each said first protocol unit representative of said communication data for completing an operation at said first protocol; and~~

~~displaying each said first protocol unit in a linear manner parallel to said second protocol unit.~~

5. (currently amended) The method of claim[4] 1, further comprising:

selecting an indicator associated with said second protocol unit for toggling between an expanded display state for showing said ~~at least one~~ or more first protocol units and a collapsed display state for hiding said ~~at least one~~ or more first protocol units.

6. (original) The method of claim 1, further comprising:

selecting a one of said field cells within a corresponding said protocol unit for toggling between a collapsed display state and an expanded display state; wherein said expanded display state shows certain ones of said field cells within said corresponding protocol unit and said collapsed display state hides said certain ones of said field cells.

7. (original) The method of claim 1, further comprising:

selecting one of said field cells; and

displaying additional descriptive information from said protocol standard for said selected one of said field cells.

8. (original) The method of claim 1, further comprising:

selecting a particular one of said field cells for displaying a menu of user options associated with said particular field cell.

9. (currently amended) The method of claim 1, further comprising:

receiving further said first protocol units for one or more (Nth-1) protocol units of said communication data transmitted according to said second an (Nth-1) protocol level of said communication protocol standard for completing an operation an Nth protocol unit at an Nth protocol level of said communication protocol standard;

converting said communication data (Nth-1) protocol unit into (Nth-1) text fields according to an (Nth-1) protocol level and converting said Nth protocol unit into Nth text fields according to said Nth protocol level;

associating said (Nth-1) text fields with respective (Nth-1) field descriptors according to said (Nth-1) protocol level for forming respective (Nth-1) field cells and associating said Nth text fields with respective Nth field descriptors according to said Nth protocol level for forming respective Nth field cells; and

displaying said Nth protocol unit having said Nth field cells on said display, said Nth field cells displayed in a hierarchical manner with respect to said second one or more (Nth-1) protocol units having said (Nth-1) field cells.

10. (currently amended) The method of claim 1, wherein:

certain ones of said first and second text fields are one of a number, a measurements on, or an interpretation representative of a sequence of bits having specific meanings at said first protocol level specified by said communication protocol standard data; and

said first field descriptors are captions respectively indicative of said first protocol level meanings of said first text fields.

11. (currently amended) The method of claim 1, wherein:

said second text fields are one of a number, a measurement, or an interpretation representative of one or more sequences of bits for said one or more first

protocol units having specific attributes at said second protocol level~~said communication; and~~

~~said first and second field descriptors include~~ are captions respectively indicative of said second protocol level attributes of said one or more sequences of bits.
~~attributes of said first and second text fields, respectively.~~

12. (original) The method of claim 1, wherein:

said first and second field descriptors use colors for representing said first and second field descriptors.

13. (currently amended) An apparatus for displaying communication information transmitted according to a communication protocol standard, comprising:

a receiver for receiving one or more first protocol units of said communication data transmitted according to a first protocol level of said communication protocol standard for completing a second protocol unit~~an operation~~ at a second protocol level of said communication protocol standard;

an interpreter for converting each said first protocol unit~~communication data~~ into first text fields according to said first protocol level and converting said second protocol unit into second text fields according to said second protocol level, and associating said first text fields on a one-to-one basis with respective first field descriptors according to said first protocol level for forming respective first field cells and associating said second text fields on a one-to-one basis with respective second field descriptors according to said second protocol level for forming respective second field cells; and

a display for presenting said second protocol unit having said first and second field cells~~said second field cells presented~~ in a hierarchical manner with respect to said one or more first protocol units having said first field cells.

14. (currently amended) The apparatus of claim 13, wherein:

said one or more first protocol units~~is a represent packets in level protocol~~ ~~for~~ said communication protocol standard.

15. (currently amended) The apparatus of claim ~~13~~ 14, wherein:

~~said first second protocol unit is represents said one or more first protocol units at said second protocol level, a protocol at level that is higher than a packet level protocol for said communication protocol standard.~~

16. (currently amended) The apparatus of claim 13, wherein:

~~the interpreter organizes said second field cells into a second protocol unit and organizes said first field cells into at least one first protocol unit, each said first protocol unit representative of said communication data for completing an operation at said first protocol; and~~

~~the display presents said second protocol unit in a linear manner and presents each said first protocol unit in a linear manner parallel to said second protocol unit, said first protocol units in a horizontal manner having said first field descriptors disposed above said associated first text fields, respectively, as identifiable cells; and presents said second protocol unit in a horizontal manner having said second field descriptors disposed above said associated second text fields, respectively, as identifiable cells.~~

17. (currently amended) The apparatus of claim ~~16~~ 13, wherein:

~~said second protocol unit includes an indicator having a first indication for indicating a collapsed display state and a second indication for indicating an expanded display state; and~~

~~the display includes an interface coupled to said indicator toggling between said collapsed display state and said expanded display state; wherein said expanded display state shows said ~~at least one or more~~ first protocol units and said collapsed display state hides said ~~at least one or more~~ first protocol units.~~

18. (currently amended) The apparatus of claim ~~13~~ 16, wherein:

a particular one of said field cells within a corresponding said protocol unit includes an indicator having a first indication for indicating a collapsed display state and a second indication for indicating an expanded display state; and

the display includes an interface coupled to said indicator for toggling between said collapsed display state and said expanded display state; wherein said expanded display state shows certain ones of said field cells within said corresponding protocol unit and said collapsed display state hides said certain ones of said field cells.

19. (original) The apparatus of claim 13, further comprising:

a selector coupled to the display for selecting a particular one of said field cells; and wherein:

the display presents additional descriptive information from said protocol standard for said particular field cell when said particular field cell is selected.

20. (original) The apparatus of claim 13, further comprising:

a selector coupled to the display for selecting a particular one of said field cells; and wherein:

the display presents a menu of user options associated with said particular field cell when said particular field cell is selected.

21. (currently amended) The apparatus of claim 13, wherein:

the receiver receives further said first protocol units for one or more (Nth-1) protocol units of said communication data transmitted according to ~~said second~~ an (Nth-1) protocol level of said communication protocol standard for completing ~~an operation~~ an Nth protocol unit at an Nth protocol level of said communication protocol standard;

~~the display presentation driver interpreter~~ converts said communication data (Nth-1) protocol unit into (Nth-1) text fields according to an (Nth-1) protocol level and converts said Nth protocol unit into Nth text fields according to said Nth protocol level; associates said (Nth-1) text fields with respective (Nth-1) field descriptors according to said (Nth-1) protocol level for forming respective (Nth-1) field cells and

associates said Nth text fields with respective Nth field descriptors according to said Nth protocol level for forming respective Nth field cells; and

the display displays said Nth protocol unit having said Nth field cells in a hierarchical manner with respect to said ~~second~~ one or more (Nth-1) protocol units having said (Nth-1) field cells.

22. (currently amended) The apparatus of claim 13, wherein:

~~certain ones of said first and second text fields are~~ one of a number, a measurement, or an interpretation representative of a sequence of bits having a specific meanings at said first protocol level specified by said communication protocol standard data; and

said first field descriptors are captions respectively indicative of said first protocol level meanings of said first text fields.

23. (currently amended) The apparatus of claim 13, further comprising:

said second text fields are one of a number, a measurement, or an interpretation representative of one or more sequences of bits for said one or more first protocol units having specific attributes at said second protocol level; and

~~said first and second field descriptors include~~ are captions respectively indicative of second protocol level attributes of said one or more sequences of bits. ~~first and second text fields, respectively.~~

24. (original) The apparatus of claim 13, wherein:

said first and second field descriptors use colors for representing said first and second field descriptors.